

Amendments to the Claims:

A clean version of the entire set of pending claims, including amendments to the claims, is submitted herewith per 37 CFR 1.121(c)(3). This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A device comprising:
at least one nanowire (1) with a surface (1a) and having optical properties including a luminescence, the surface (1a) being provided with at least one binding site (3) able to selectively bind a molecule (2, 4) that, when bound to the binding site, quenches the luminescence of the nanowire, and
a photodetector (12) for detecting the optical properties luminescence of the nanowire (1) when the molecule (2, 4) selectively binds to the surface (1a) and for outputting a signal in response to the luminescence of the nanowire that indicates whether the molecule is bound to the binding site and is quenching the luminescence of the nanowire.
2. (Currently Amended) A device according to claim 1, wherein the photodetector (12) is a phototransistor comprises:
a substrate including a phototransistor; and
an optical filter disposed on the phototransistor, the nanowire being disposed on the optical filter, the optical filter passing light having a wavelength corresponding to a spectrum of the luminescence of the nanowire, and rejecting light at other wavelengths.
3. (Currently Amended) A device according to claim 1, wherein the molecule (2, 4) is a biomolecule.

4. (Currently Amended) A device according to claim 3, wherein the biomolecule is a luminescent biomolecule, having a first luminescence spectrum labeled with a dye.

5. (Currently Amended) A device according to claim [[1]]4, wherein the at least one nanowire (1) has a second luminescence spectrum ~~and dye has an absorption spectrum which overlaps in frequency with a spectrum of the luminescence of the nanowire.~~

6. (Canceled)

7. (Currently Amended) A device according to claim 1, wherein the at least one nanowire (1) furthermore comprises an activator ion.

8. (Canceled)

9. (Currently Amended) A device according to claim 1, wherein the device comprises an array of nanowires-(1).

10. (Currently Amended) A device according to claim 1, wherein at least a first nanowire (1) is modified with at least one first binding site-(3), and at least a second nanowire-(1) is modified with at least one second binding site-(3), the first and second binding sites-(3) binding different molecules-(2,4) from each other.

11. (Currently Amended) A device according to claim 1, wherein at least two nanowires (1) have different sizes.

12. (Currently Amended) A device according to claim 1, wherein the at least one nanowire (1) is dispersed in a liquid to form a suspension.

13. (Currently Amended) A device according to claim 12, wherein the suspension of the at least one nanowire ~~(1)~~ is drop-deposited onto a surface.

14. (Currently Amended) A device according to claim 1, wherein the at least one nanowire ~~(1)~~ is grown onto a surface.

15. (Currently Amended) A device according to claim 1, wherein the at least one nanowire ~~(1)~~ is grown into a porous matrix.

16. (Currently Amended) A device according to claim 1, wherein the device is a nanowire sensor for the detection of an analyte ~~(2, 4)~~, wherein the at least one binding site ~~(3)~~ is able to selectively bind an analyte ~~(2, 4)~~, wherein the optical properties of the nanowire ~~(1)~~ are used for analyte ~~(2, 4)~~ detection.

17 - 21. (Cancelled).